CLAIMS

1. An aluminum alloy brazing material, consisting essentially of:

Si: 6 to 15 mass%;

Zn: 1 to 20 mass%;

at least one of Cu: 0.3 to 0.6 mass% and Mn: 0.3 to 1.5 mass%; and

the balance being aluminum and impurities.

2. The aluminum alloy brazing material as recited in claim 1, wherein the content of Si is 6 to 12.5 mass%.

3. The aluminum alloy brazing material as recited in claim 1 or 2, wherein the content of Zn is 2 to 7 mass%.

4. The aluminum alloy brazing material as recited in any one of claims 1 to 3, wherein the content of Cu is 0.4 to 0.55 mass%.

5. The aluminum alloy brazing material as recited in any one of claims 1 to 4, wherein the content of Mn is 0.4 to 1 mass%.

6. A brazing member comprising an aluminum or aluminum alloy substrate and a brazing layer formed on a surface of the substrate, wherein the brazing layer is a sprayed layer of the aluminum alloy brazing material defined by any one of claims 1 to 5.

7. A brazed article, comprising:

the brazing member defined by claim 6; and

a joining member,

wherein the brazing member and the joining member are brazed with each other via the brazing layer of the brazing member.

8. A method of manufacturing a brazed article, comprising the steps of:

preparing a brazing member by spraying the aluminum alloy brazing material defined by any one of claim 1 to 5 onto a surface of an aluminum or aluminum alloy substrate to form a brazing layer; and

brazing the brazing member and another joining member via the brazing layer by heating both of the members in a combined manner.

9. The method of manufacturing a brazed article as recited in claim 8, wherein the step of brazing is performed under normal pressures.

10. A brazing heat exchanging tube, comprising:

an aluminum or aluminum alloy heat exchanging tube substrate; and

a brazing layer formed on a surface of the heat exchanging tube substrete,

wherein the brazing layer is a sprayed layer of the aluminum alloy brazing material defined by any one of claims 1 to 5.

11. The brazing heat exchanging tube as recited in claim 10, wherein the heat exchanging tube substrate is made of a JIS A1000 series alloy.

12. The brazing heat exchanging tube as recited in claim 10, wherein the heat exchanging tube substrate is made of a JIS A3003 series alloy.

13. The brazing heat exchanging tube as recited in claim 10, wherein the heat exchanging tube substrate is made of an Al-Cu-Mn series alloy containing Cu: exceeding 0.2 mass% but not exceeding 0.6 mass% and Mn: 0.15 to 2 mass%.

14. The brazing heat exchanging tube as recited in claim 13, wherein, in the Al-Cu-Mn series alloy, the content of Cu is 0.25 to 0.5 mass%, and the content of Mn is 0.15 to 0.4 mass%.

15. The brazing heat exchanging tube as recited in claim 13, wherein, in the Al-Cu-Mn series alloy, the content of Cu is 0.25 to 0.5 mass%, and the content of Mn is 0.6 to 1.5 mass%.

16. A heat exchanger, comprising:

the brazing heat exchanging tube defined by claim 10; and a fin,

wherein the heat exchanging tube and the fin are brazed each other via the brazing layer of the heat exchanging tube.

17. The heat exchanger as recited in claim 16, wherein the heat exchanging tube substrate of the brazing heat exchanging tube substrate is a JIS A1000 series alloy.

18. The heat exchanger as recited in claim 16, wherein the heat exchanging tube substrate of the brazing heat exchanging tube is a JIS A3003 series alloy.

19. The heat exchanger as recited in claim 16, wherein the heat exchanging tube substrate of the brazing heat exchanging tube is made of an Al-Cu-Mn series alloy containing Cu: exceeding 0.2 mass% but not exceeding 0.6 mass% and Mn: 0.15 to 2 mass%.

20. The heat exchanger as recited in claim 19, wherein, in the Al-Cu-Mn series alloy, the content of Cu is 0.25 to 0.5 mass%, and the content of Mn is 0.15 to 0.4 mass%.

21. The heat exchanger as recited in claim 19, wherein, in the Al-Cu-Mn series alloy, the content of Cu is 0.25 to 0.5 mass%, and the content of Mn is 0.6 to 1.5 mass%.

22. The heat exchanger as recited in any one of claims 16 to 21, wherein the fin is made of a JIS A3000 series alloy.

23. A method of manufacturing a heat exchanger, comprising the steps of:

preparing a brazing heat exchanging tube by spraying the aluminum alloy brazing material defined by any one of claims 1 to 5 onto a surface of an aluminum or aluminum alloy heat exchanging tube substrate to form a brazing layer; and

brazing the brazing heat exchanging tube and the fin via the brazing layer of the brazing heat exchanging tube by heating both of the brazing heat exchanging tube and the fin in a combined manner.

24. The method of manufacturing a heat exchanger as recited in claim 23, wherein the step of preparing the brazing heat exchanging tube is performed by forming the heat exchanging tube substrate by extrusion and subsequently spraying an aluminum alloy brazing material onto the heat exchanging tube substrate.

25. The method of manufacturing a heat exchanger as recited in claim 23 or 24, wherein the step of brazing is performed under normal pressures.